

Abstract

**FORWARDING PACKETS IN A GATEWAY PERFORMING
NETWORK ADDRESS TRANSLATION (NAT)**

5 A gateway device providing a search utility to determine both NAT information and forwarding information ("both pieces of information") in a single search operation. The single search operation may be implemented using a single table storing both pieces of information necessary for processing a packet. As a result, both pieces of information can be potentially retrieved in a single memory access. Due to the single (or few) memory access, the throughput performance of a gateway may be enhanced. In an embodiment, the gateway is implemented as a service selection gateway which provides connectivity between multiple remote systems and service domains. The NAT/forwarding information is partitioned according to service domains such that the information needed to process packets from/to the same service domain is contained in the same table.

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